

Part 4 -- Remarks

This Amendment and Response is responsive to the office action mailed November 2, 2004. A Petition for a Two-Month Extension of Time and the fee therefor is filed concurrently herewith, extending the time for response to April 2, 2005. April 2, 2005 is a Saturday, which extends the time for response to April 4, 2005.

The November 2 office action requests confirmation of the verbal election made in response to a telephone restriction requirement; objects to the drawings for failing to show a claimed element; rejects claims 1-31 under 35 USC 112, second paragraph as indefinite; rejects claims 1, 8, 9, 12-16, 19 and 28 under 35 USC 102(e) as anticipated by Lampel (6,625,830); rejects claims 17-18 and 24-27 under 35 USC 103(a) as obvious from Lampel; rejects claims 2-7, 20-23 and 29-31 under 35 USC 103 (a) as obvious from Lampel in view of Saloff (4,643,481); and rejects claims 10 and 11 under 35 USC 103(a) as obvious from Lampel in view of Morrison (5,088,747).

Reconsideration of these objections and rejections with respect to pending claims 1-27 and 55-58 is respectfully requested, in view of the above amendments and these remarks.

Restriction Requirement

Claims 1-31 were elected for further prosecution in response to the telephone restriction requirement. The election was made without traverse.

Drawing Correction

Figs. 2 and 3 have been amended to show the resilient plastic beads as previously described in the specification at page 18, line 18 to page 19, line 2. The additions to these figures are outlined in red ink attached at the end of these remarks. The replacement sheets 2 and 3 of drawings containing Figs. 2 and 3 have each been labeled "Replacement Sheet." It is believed that these corrections eliminate the basis for the objection to the drawings.

Fig. 4 has been amended by changing the characteristic of the crosshatching to illustrate the plastic nature of the materials used in constructing the human interface portion 26 and the base portion 28, as described in the preceding paragraph.

Specification Amendments

The amendments to the paragraphs at page 8, lines 19-23 refer to the drawing changes in Figs. 2 and 3.

The paragraph at page 18, line 18 to page 19, line 2 have been amended to introduce the reference number 87 which refers to the plastic beads which are now shown in amended Figs. 2 and 3. No new matter has been added.

The statement added to the paragraph at page 13, lines 20-28 describes features shown in the drawings, specifically Figs. 2-4. No new matter has been added. The substantially different characteristics of the upper surface support contour 32 and the the protrusion 54 in the lower surface 56 has been added as a limitation to amended claim 1.

Canceled Claims

Claims 27-54 have been canceled. It is expected that the non-elected claims 32-54 will be presented in a divisional application.

Claims 27-31 have been canceled in reliance on the subject matter of pending claims 1-26, which incorporate the subject matter of claims 27-31.

New Claims

New claim 55 presents subject matter similar and complementary to that discussed in connection with the amendment to claim 1, but focusing on the upper surface contour of the base member relative to the contact configuration. No new matter has been added for the same reasons as discussed in connection with the amendment to claim 1, discussed primarily below.

New claims 56-58 depend on claims 23-25, respectively. The subject matter presented in New claims 56-58 is discussed in the specification at page 17, lines 23-29, among other places. No new matter has been added.

Indefiniteness Rejection

The indefiniteness rejection is not understood. Claims 1-27 specifically recite “A modular seat cushion.” The modular seat cushion supports a person from a seat support structure. The seat support structure has a predetermined configuration. The seat support structure is the environment with which the modular seat cushion interacts. Nothing is indefinite about these aspects of the preamble of claim 1.

The indefiniteness rejection asserts that the applicant positively claims the “seat support structure,” but this is not the case, with respect to claims 1-24. The body of claim 1 refers to the seat support structure in regard to the interaction of the lower surface contact configuration of the base portion with the seat support structure. It does not make a claim indefinite to define one or more of elements with respect to the environment with which those features interact, and defining one or more elements of the claim in relation to the environment does not make the environment an affirmative element of the claim. This is the case in claim 1. The recitations relating to the lower surface contact configuration of the base portion are defined in relation to the environmental seat support structure. Such a definition does not make claim 1 indefinite and does not make the seat support structure a part of the modular seat cushion or an element of the invention. The plain language of claim 1 makes this clear and definite. If the indefiniteness rejection is continued, the Examiner specifically requested to support the continued rejection with authority that supports the rejection.

On the other hand, claims 25-27 recite the seat support structure as integrated or involving the base portion of the seat cushion. In these claims, as is specifically recited, the seat support structure is an affirmative element of the modular seat cushion. The distinction between the seat support structure not constituting an affirmative element of claims 1-24, while constituting an affirmative element of claims 25-27 is clear from the specific language of those claims themselves.

For these and other reasons, it is believed that the pending claims are sufficiently definite to merit withdrawal of the indefiniteness rejection.

Anticipation Rejection

It is respectfully submitted that amended claim 1 is distinguishable from Lampel and that the anticipation rejection should be withdrawn.

As is described more specifically in the claims and in the specification of the application, the invention relates to creating a seat cushion by combining an upper human interface portion with a lower base portion. The upper surface of the human interface portion defines an upper surface support contour which contacts and interacts with the anatomy of the user. Preferably, the upper surface support contour has a configuration which is selected to provide the individualized support for the user's anatomy, or to provide support for the user according to a general class of the users anatomy. The base portion is selected to interact with a seat support structure, such as a platform seat, sling seat, dropped platform seat, pan seat or seat shell of a wheelchair. By combining a selected human interface portion with a selected base portion, a seat cushion is created which offers improved support for the user according to his or her individual anatomy while simultaneously adapting the seat cushion to the user's preferred type of wheelchair or other seat support structure.

For this claimed combination to function effectively, the human interface portion should interlock with the base portion to mate them together and prevent or inhibit their separation. The claims require two complementary portions of an interlocking structure, defined on lower and upper surfaces of the human interface and base portions, respectively.

Lampel describes a seat cushion having a number of laminated layers, 24, 32 and 34, all of which are located above a bottom structure 30 which has raised features 14 and 16, as shown in Fig. 2. Because the upper layers 24, 32 and 34 assume the same shape established by the bottom structure 30 and its raised features 14 and 16, Lampel has been interpreted as anticipating the interlocking structure between the upper and lower surfaces of the human interface and base portions.

As amended claim 1 recites, the lower surface of the human interface portion and the first complementary portion of the interlocking structure have a contour which is substantially different from the support contour of the upper surface of the human interface portion. The upper surface of the upper layer 24 in Lampel, which contacts the user, has essentially the same contour as the lower surface of the layer 24, because the layer 24 is a uniform thickness layer or panel. The present invention is not directed to the use of uniform layers of padding, as is now clearly stated in amended claim 1, which includes the limitation that the lower surface of the human interface portion in the first complementary portion of the interlocking structure have a contour which is substantially different from the support contour of the upper surface of the human interface portion. Consequently, Lampel does not show or suggest the lower surface of the layer 24 having a contour which is substantially different from the support contour of the upper surface, because Lampel uses uniform thickness layers or pads to create the portion of the cushion which interfaces with the user.

Indeed, the layers 32 and 34 in Lampel have similar contours of their upper and lower surfaces as well. Consequently, any or all of the layers 24, 32 and 34 in Lampel have substantially the same contour in their upper and lower surfaces, and therefore do not meet the requirement of amended claim 1 that the upper surface support contour and the lower surface and the first complementary interlocking portion of the human interface portion have substantially different contours.

Claims 8, 9, 12-16 and 19 are not anticipated by Lampel for the same reasons that claim 1 is not anticipated by Lampel. These include the same distinguishing features as claim 1. Neither Lampel nor the other cited references disclose or suggest the use of a protrusion and a recess to form the interlocking structure, as recited in claims 13-16, among other things.

For these and other reasons, amended claim 1, and its dependent claims 8, 9, 12-16, 19 are not anticipated by Lampel.

Obviousness Rejections

In regard to the obviousness rejection of claims 17 and 18 based on Lampel, the office action acknowledges that Lampel fails to expressly disclose that the recess extends completely through the base portion and the human interface portion rests directly upon the seat support structure, as recited in claims 17 and 18. The office action further asserts that the application does not state that the recess "solves any particular problem or produces any unexpected result." This is incorrect. The Examiner's attention is respectfully directed to the specification at page 14, lines 4-7. Using a hole as the recess in the base portion allows the support contour of the human interface portion to extend more deeply into the seat cushion while still interlocking the two portions together, which helps accommodate the type of user anatomy which requires a deeper upper surface support contour. The deeper upper surface support contour also allows the center of gravity of the user to be lowered relative to the seat support structure, which assists when maneuvering the wheelchair. A lower center of gravity also contributes to stability of the wheelchair. The office action acknowledges that Lampel does not disclose the subject matter of claims 17 and 18. Nothing in Lampel suggests providing a deeper support contour to accommodate different types of user anatomies or to contribute to the stability and maneuverability by lowering the center of gravity, in the claimed context of an interlocking structure between a human interface and a base portion of the seat cushion. Accordingly, claims 17 and 18 are not believed to be obvious from Lampel.

In regard to the obviousness rejection of claims 24-27 based on Lampel, the office action acknowledges that Lampel fails to describe the base portion and the seat support structure as essentially the same element. However, the office action takes the position that only routine skill is involved in combining these two elements as one. Lampel is concerned only with a seat cushion, not integrating the portion of the seat cushion with the seat support structure. Even if Lampel was integrated with the seat support structure, there is still no recognition in Lampel of the interlocking structure

recited in these claims, as discussed above in conjunction with claim 1. Claims 24-27 involve more than simply combining two elements as one, namely the interlocking structure which is not disclosed or suggested by Lampel.

In regard to the obviousness rejection of claims 2-7 based on Lampel in view of Saloff, the office action acknowledges that Lampel fails to disclose making the human interface or base portion of plastic, but asserts that Saloff discloses that such portions are made of "molded plastic." Claims 2-7 specifically recite that the plastic material is "resilient." The bottom base 10 described in Saloff is specifically described as "rigid." (See column 2, line 44.) Thus, there is no teaching or suggestion in either Lampel or Saloff of making the human interface and base portions from resilient plastic material, and more particularly that when so made, the interlocking structure will be satisfactory when made of such material. Moreover, Saloff's upper cushion 12 is described as being formed from "flotation cells" which are filled with "fluid" held in place with the valves. (See column 6, line 47-column 7, line 10.) Fluid is not a resilient plastic material. Claim 3 requires the resilient plastic material to be breathable. The rigid material of Saloff's base, and the fluid-tight flotation cells of Saloff's upper cushion, are not breathable.

Neither Lampel nor Saloff describes making the cushion portions from fused-together resilient plastic beads, as described in claims 4-6. The office action asserts that claims 4-6 are product by process claims. They are not, as the plain language of the claims specifically state. The human interface and base portions comprise fused-together resilient plastic beads. The erroneous product by process interpretation of these claims in the office action, and the fact that neither Lampel nor Saloff describes the use of fused-together resilient plastic beads as the basis for forming portions of a seat cushion, does not render claims 4-6 obvious. The significant benefits of fused together resilient plastic beads for portions of a seat cushion are described in the application at page 18, line 18 to page 19, line 2, among other places.

In regard to the obviousness rejection of claims 20-23 based on Lampel and Saloff, the office action asserts that the cushion on Lampel could have been modified with the teaching of Saloff to produce a variety of sizes and shapes to more precisely fit the wheelchair user, and that the contact configuration of the base would change according to the seat support structure presented by the wheelchair. Such an argument misses the basic feature of claims 20-23. That basic feature is achieving a custom-like seat cushion by combining one of a plurality of different human interface portions with one of a plurality of different base portions as a result of the interlocking structure operative between the two portions. Lampel builds up a single seat cushion by laminating the various layers together into a unified structure. Nothing in Lampel discloses or suggests substituting different upper layers to accommodate differences in the anatomy of the user. Saloff discusses molding the rigid base to "approximately" fit the anatomy of the user, while relying on the flexible fluid-filled cushion to achieve the final fit. Nothing in Saloff discusses or suggests changing the rigid base to accommodate different seat support structures of the wheelchair, in a manner comparable to the use of the base portion of claims 20-23. Nothing in Saloff discusses or suggests changing the configuration of the seat cushion, which would be the comparable to the human interface portion aspect of claims 20-23. Indeed, Saloff relies on a one-size-fits-all concept for his upper seat cushion, because his fluid-filled cells change shape to adapt to the anatomy of the user. As has been described above in conjunction with claim 1, neither Lampel nor Saloff teach the basic concept of interlocking different selectable human interface and base portions together to create a singular seat cushion which accommodates the user's particular anatomy and the user's particular selection of a seat support structure in a wheelchair, for example. Accordingly, claims 20-23 are not taught or suggested by Lampel and Saloff, and it is believed that the obviousness rejection is erroneous and should be withdrawn. The significant advantages and improvements available from selecting among multiple human interface portions each with different upper surface support contours and

multiple base portions each with different contact configurations are described in the specification in conjunction with Fig. 11 at page 19, line 18, among other places.

In regard to the obviousness rejection of claims 10 and 11 based on Lampel and Morrison, the advantages described in the preceding paragraph are particularly important to wheelchair users, and the ability to create cushions to specifically address the unique needs of wheelchair users is a significant advancement in the art, as described in the specification at page 20, lines 3-19, among other places. Lampel is entirely silent on accommodating different types of seat support structures in wheelchairs. Morrison describes a hard firm support member 90 which may be inserted between the sling seat of a collapsible or foldable wheelchair to create a firm effect from a standard seat cushion 56, or the hard support member 90 may be eliminated to create a more flexible effect when the cushion directly interacts with the sling seat. Nothing in Morrison describes changing the contact configuration of the base portion of a seat cushion. The inserted firm support member 90 simply changes the amount of rigidity of support available from the sling seat and the seat cushion, but does nothing to change the configuration of that seat itself. Moreover, the insertion and the removal of the firm support member 90 does not substantially complement the entire lower surface of the seat cushion, in the manner described in claim 10. For these reasons, and others, it is not believe that Lampel and Morrison render the subject matter of claims 10 and 11 obvious.

Conclusion

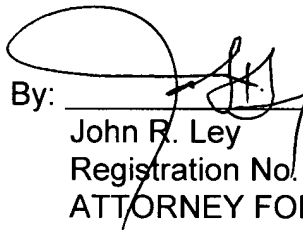
Claim 1 and its dependent claims 2-26 and 55-58, are not anticipated because, among other reasons, the first one of the first and second complementary portions of the interlocking structure operative between the human interface portion and the base portion has a contour which is substantially different from the support contour of the upper surface support contour of the human interface portion, thereby distinguishing from the uniform thickness layered lamination structure of Lampel and Morrison, and because an upper surface support contour is provided independent of the shape of its

underlying features, unlike the flexible fluid-filled cell pad of Saloff or the flexible upper cushion pad of Morrison. The concept of interlocking a human interface portion which has a selected upper surface support contour to address the particular anatomical characteristics of the user, with a separate base portion which has a lower surface contact configuration adapted to complement the type of seat support structure in a wheelchair, for example, is not suggested by Lampel, Saloff or Morrison, either singularly or in combination. Accordingly, it is believed that the anticipation and obviousness rejections are erroneous and should be withdrawn.

Allowance of the pending claims is requested. The Examiner is encouraged to telephone the undersigned to resolve any issues which may be seen as inhibiting the immediate allowance of this application.

Respectfully submitted,

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REPLACEMENT SHEET



2/11

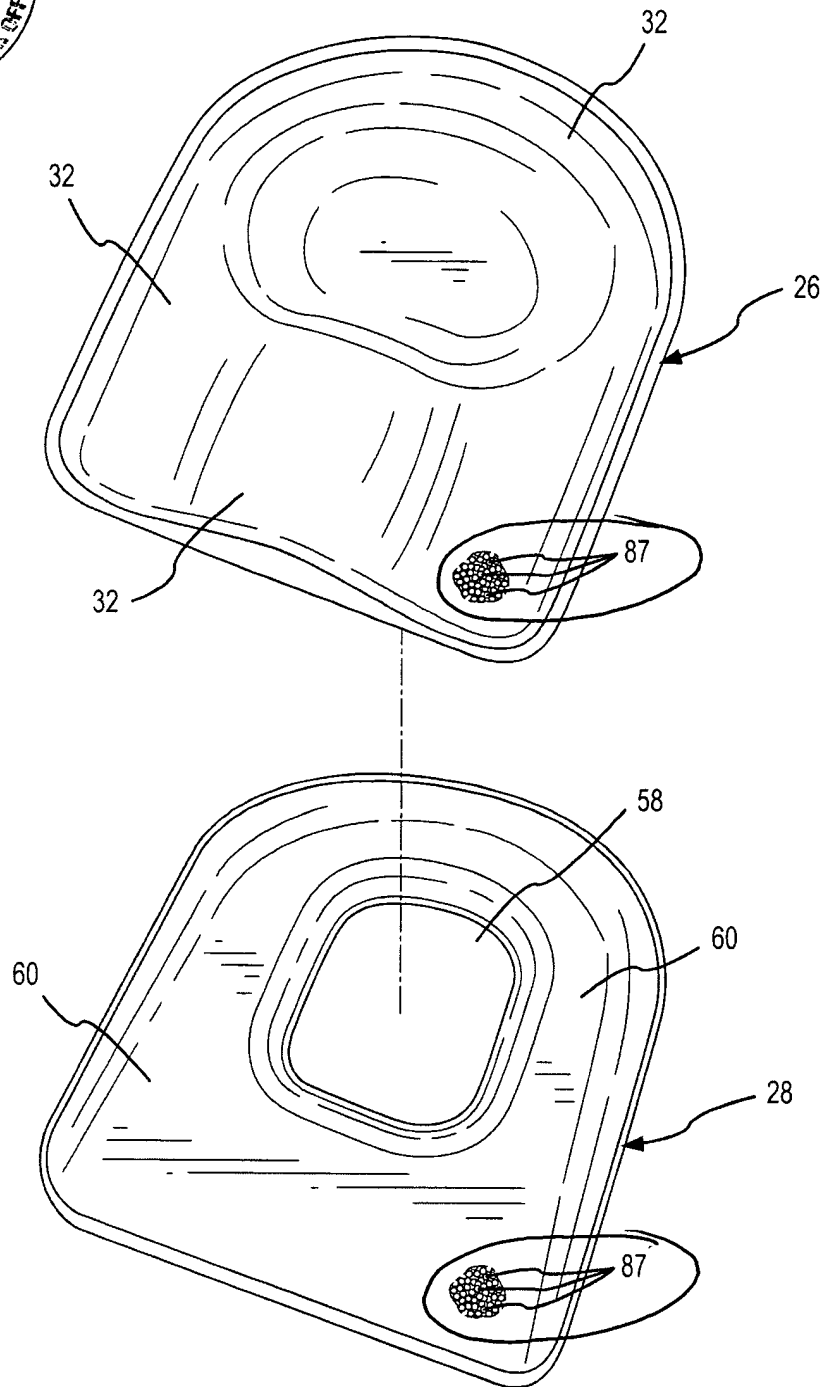


FIG.2

REPLACEMENT SHEET

3/11

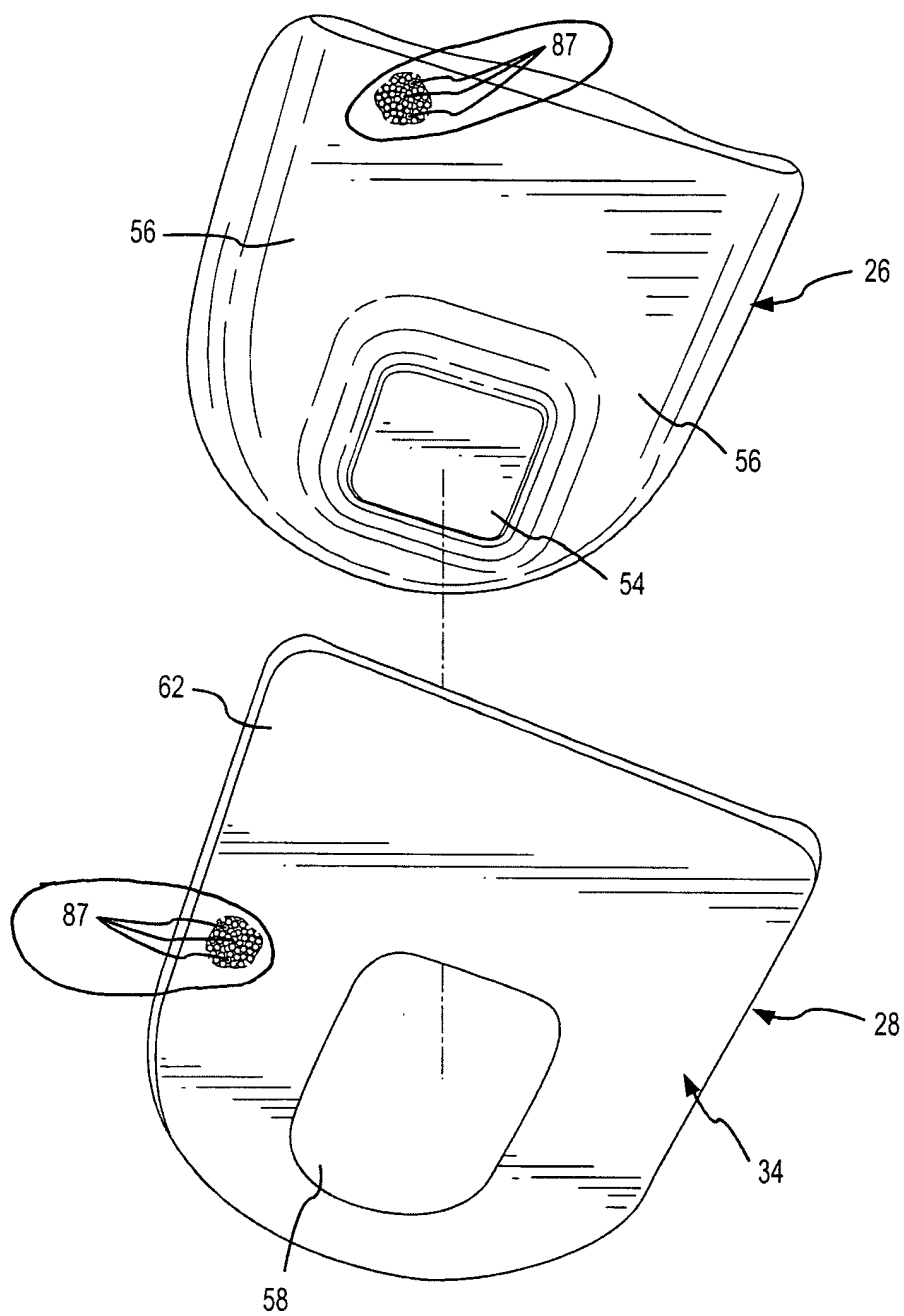


FIG.3

REPLACEMENT SHEET

4/11

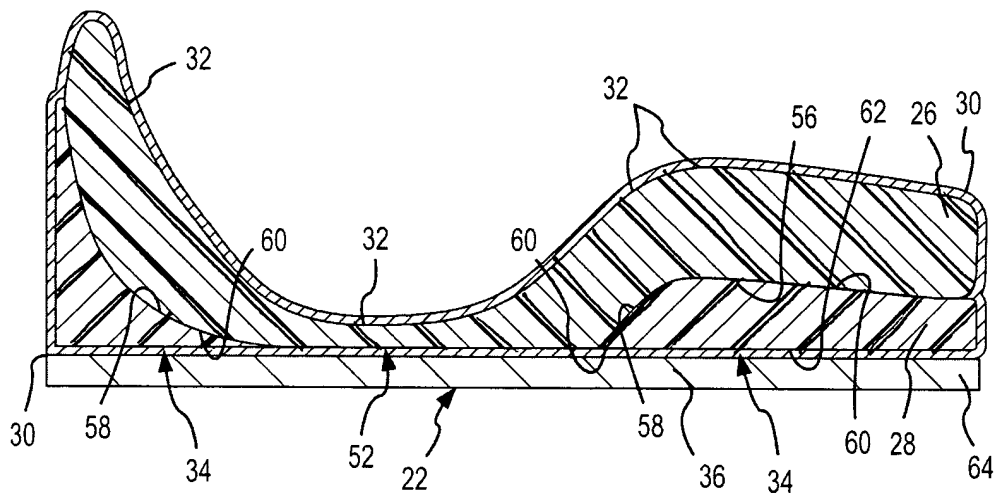


FIG.4

Serial No. 10/628,859

Part 1 -- Substitute Drawings

Attached.